## UNITED STATES PATENT AND TRADEMARK OFFICE **CERTIFICATE OF CORRECTION**

PATENT NO.

: 7,125,809 B1

Page 1 of 3

APPLICATION NO.: 09/653561

DATED

: October 24, 2006

INVENTOR(S)

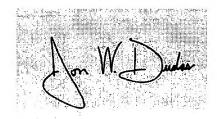
: Larry Hillyer et al.

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

Delete Title page illustrating a figure, and substitute therefor, new Title page illustrating a figure. (attached)

Signed and Sealed this

Seventeenth Day of April, 2007



JON W. DUDAS Director of the United States Patent and Trademark Office

# (12) United States Patent Hillyer et al.

(10) Patent No.: (45) Date of Patent:

US 7,125,809 B1 Oct. 24, 2006

(54)	METHOD AND MATERIAL FOR REMOVING
	ETCH RESIDUE FROM HIGH ASPECT
	RATIO CONTACT SURFACES

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  (US)
- (\*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.
- (21) Appl. No.: 09/653,561
- (22) Filed: Aug. 31, 2000
- (51) Int. Cl. H01L 21/302 (2006.01) H01L 21/461 (2006.01)
- (52) U.S. Cl. ............... 438/725; 438/597; 257/B23.007

See application file for complete search history.

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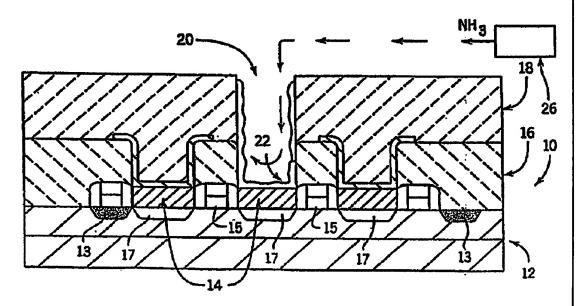
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Primary Examiner—Alexander Ghyka (74) Attorney, Agent, or Firm—Dickstein Shapiro LLP

#### (57) ABSTRACT

Contact openings in semiconductor substrates are formed through insulative layers using an etchant material. The etchant typically leaves behind a layer of etch residue which interferes with the subsequent deposition of conductive material in the opening, as well as the conductive performance of the resulting contact. A method of etch removal from semiconductor contact openings utilizes ammonia to clean the surfaces thereof of any etch residue.

### 84 Claims, 6 Drawing Sheets



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Replace Figure 6 with the following Drawing Figure 6.

